



REMARKS

In the Office Action, claims 1-8, 47-55, and 57-94 were rejected. By the present Response, Applicants have amended claims 1, 3, 4, 57-60, 68, 77-79, and 87, and canceled claims 7 and 63 without prejudice. Upon entry of the amendments, claims 1-6, 8, 47-55, 57-62, and 64-94 will remain pending in the present patent application. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

Double Patenting Rejection

In the Office Action, claims 1-8, 47-55, and 57-94 were rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1-42 of the Thomas et al. reference (U.S. Patent No. 6,727,483; hereinafter "Thomas"). Applicants, however, respectfully request that the Examiner hold this double-patenting rejection in abeyance until the allowability of the pending claims is finally determined. At such time, Applicants will strongly consider filing a terminal disclaimer to overcome the presented obviousness-type double patenting rejection, if it is maintained.

Rejections Under Section 103

In the Office Action, claims 1-8, 47-55, and 57-94 were rejected under 35 U.S.C. § 103 as obvious in view of the Henderson et al. reference (U.S. Patent No. 3,403,240; hereinafter "Henderson"), the Duncan reference (U.S. Patent No. 5,198,053; hereinafter "Duncan"), and the Antier et al. reference (U.S. Patent No. 4,058,696; hereinafter "Antier").

Applicants, however, respectfully assert that the pending claims are patentable over the cited references, whether taken alone or in combination, because these references do not disclose all of the features recited in these claims and, furthermore, because the

requisite motivation for combination for a *prima facie* case of obviousness has not been presented. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). To establish a *prima facie* case, the Examiner must not only show that the combination or modification includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *See Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). Moreover, obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination or modification. *See ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Indeed, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 16 U.S.P.Q.2d. 1430 (Fed. Cir. 1990).

Additionally, objective evidence, rather than subjective belief and unknown authority, of the requisite motivation or suggestion to combine or modify the cited references must be provided. *See In re Lee*, 61 U.S.P.Q.2d. 1430 (Fed. Cir. 2002). Moreover, when prior art references require a selected combination or modification to render obvious a subsequent invention, there must be some reason for the combination or modification other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination or modification. *See Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). Indeed, the Federal Circuit has warned that the Examiner must not “fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.” *See In re Dembiczak* 50 U.S.P.Q. 2d 52 (Fed. Cir.1999) (quoting *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir.1983)). Moreover, avoiding hindsight reconstruction is especially important regarding less technologically complex inventions,

where the very ease which the invention can be understood may prompt one employ such hindsight. *See id.* Thus, “case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.” *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999) (emphasis added).

With the foregoing in mind, Applicants respectfully assert that the pending claims are patentable for at least two reasons: 1) The cited references fail to disclose all of the features recited in the pending amended independent claims; and 2) the requisite motivation for combination to reach the pending claims with the cited references has not been established.

The cited references do not disclose a power source operable to convert incoming power to controlled, variable frequency output power.

As one example, the cited references do not disclose a power source operable to “convert incoming power to controlled, variable frequency output power,” as recited in amended independent claims 1, 47, 57, 68, 79, and 87. (Emphasis added.) Rather, in Henderson’s device, the manual transitioning of capacitors 38 between coupled and uncoupled states would not influence the frequency of the output power to the heating element 22. That is, although Henderson states that “current in the induction heating element is adjusted manually by setting of the several capacitor switches 38” (Henderson, col. 2, ll. 52-55), this statement does not suggest that the frequency of the outputted ac current is in any way affected. Instead, as would be appreciated by those of ordinary skill in the art, the capacitor switches 38—which are in parallel to one another—would simply dampen the outputted ac current, thus reducing its amplitude. Again, Applicants respectfully assert that changing the amplitude of the outputted ac current does not change this current’s frequency.

Furthermore, Applicants respectfully submit that in Duncan—which is the reference the Examiner relies on for disclosure related to a programmable power source controller—there is no teaching or suggestion that the frequency of the output power is ever altered. In Duncan, a computer 29 is said to control “the induction unit to produce the time-temperature curve in FIG. 10.” However, this temperature curve may be effectuated by changing current or voltage, completely independent of frequency. In other words, Applicants respectfully assert that nothing in Duncan suggests that the frequency of the outputted electrical current is controlled or varied, as recited in the amended independent claims of the present application. Any assertion to the contrary, Applicants respectfully submit, would be improperly speculative.

The cited references do not disclose a power source and a programmable power source controller in a portable unit.

Additionally, the cited references do not disclose an induction heating system having, in a portable unit, a power source and a programmable power source controller, as are recited in amended independent claims 1, 47, 57, 68, and 87. Rather, in the Duncan device—which, as discussed above, the Examiner relies on for disclosure related to a programmable controller—the purported programmable controller is not portable, let alone in a portable unit with the power source. The power source of the induction unit 9 of Duncan is controlled by a computer 27 that “may take the form of a PC/AT or the like.” See Duncan, col. 7, ll. 50-52 (emphasis added). This computer 27 employs tailored software to generate a control signal used to control the induction unit. As an intermediary between the computer 27 and the induction device 9, Duncan employs a control computer 30, which controls the power output of the induction unit 9 in response to commands from the separate computer 27. See *id.* at col. 7, ll. 56-60. However, as best illustrated in Fig. 3 of Duncan, the computer 27 (also identified by Duncan by reference numeral 29) is separate from the induction unit 9 and, as such, the control computer 30. In summary, the computer 27 with the program is separate from control computer 30 local to the induction unit 9. Recalling that the computer 27 of Duncan on

which the “software” is resident is a standard PC/AT, Applicants respectfully assert that this computer 27 is not portable. Moreover, as computer 27 is separate from the induction unit, Applicants respectfully assert that the computer 29 and the induction unit 9 cannot be equated with the power source and power source controller that are “in a portable unit,” as recited in the instant claims. Indeed, nothing in Duncan suggests that computer 29 is capable of programmed control. Rather, computer 29 unintelligently reacts to control signals from the separate computer 27.

The cited references do not disclose a cart operable to transport both the power source and the power source controller.

Applicants also respectfully assert that the cited references do not disclose a cart for transporting both the power source and programmable power source controller as recited in amended independent claims 47, 68, and 87. Instead, as discussed above, Duncan discloses a computer 27, which has resident software, that is separate from the induction unit 9 and that is not portable. As such, Applicants respectfully assert that Duncan cannot be said to disclose a cart, let alone a cart that is operable to transport both the power source and the power source controller. Again, Applicants respectfully assert that Duncan teaches a programmed computer 27 that is wholly separate from the induction unit 9 and that is not portable. Moreover, nothing in Henderson or Antier is capable of obviating this deficiency of Duncan. Indeed, Henderson does not disclose any sort of a programmable controller, let alone a cart for the programmable controller, and Antier also does not disclose any semblance of a cart or a programmable controller that is portable.

The cited references do not disclose a cooling unit coupleable to an induction heating cable directly for circulating a cooling fluid through the cable and around the workpiece.

Additionally, Applicants respectfully assert that the cited references do not disclose a cooling unit directly coupled to an induction heating unit directly for circulating cooling fluid through the cable and around the workpiece, as recited in

amended independent claim 1. Rather, in Duncan—which is the reference the Examiner relied on for disclosure related to a fluid-cooled induction cable—the induction-heating element 22 is connected to the unit 10 via intermediaries, namely the handle 20 and the cables 12, 14, 16, and 18. In fact, in the Henderson device, cooling fluid and electrical current are routed separately from the unit 10 to the handle 20, at which point these resources merger for delivery to the heating element 22. As a consequence, the handle 20 of Henderson presents a relatively complex construction and, furthermore, requires insulation tape to be wound around the entire handle 20. By contrast, a directly coupled assembly, as is claimed, would avoid such complexity.

The cited references lack the requisite motivation for combination.

Even assuming, *arguendo*, that the cited references did disclose all of the recited features of the pending claims, Applicants respectfully assert that objective evidence supporting the obviousness of making the reference combination has not been presented. Applicants again respectfully assert that the mere fact that references can be combined does not objectively demonstrate that the references would obviously be combined by one of ordinary skill in the art to reach the given claims. With specific reference to the present case, Applicants respectfully assert that the presented motivation for combination: “it is contemplated with [the] ambit of ordinary skill artisan [*sic*] to automate a manual control device of Henderson when technology is available to improve quality,” merely retrospectively identifies what is taught by Applicants. In other words, Applicants respectfully assert that the Examiner has not presented objective evidence that demonstrates that the cited references would be obviously combined to reach the instant claims. Instead, the Examiner has relied on Applicants’ specification as a road map to combine and apply the cited references. Applicants respectfully submit that such use of impermissible hindsight construction is not appropriate.

Conclusion

All of the claims pending in the application are thus believed to be clearly patentable over the prior art of record, and their reconsideration and allowance are requested at the Examiner's earliest convenience. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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